

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): An apparatus comprising:

a threshold detector having a first current comparator to determine if an input signal exceeds a threshold, the threshold detector including an absolute value detector coupled to receive the input signal from an amplifier stage; and

a second current comparator coupled to receive an output of the first current comparator;

a current source to provide a source current to the absolute value detector;

a reference circuit to generate a tracking reference signal; and

a feedback circuit to generate a feedback signal to control the current source, the feedback signal based upon the tracking reference signal and the output of the absolute value detector.

Claim 2 (withdrawn): The apparatus of claim 1, wherein the threshold detector comprises a differential amplifier stage having an input stage comprising a first transistor and a second transistor having collectors and emitters coupled together.

Claim 3 (withdrawn): The apparatus of claim 2, wherein the differential amplifier stage has a reference stage having a third transistor and a fourth transistor, the third and fourth transistors having emitters coupled to the emitters of the first and second transistors.

Claim 4 (withdrawn): The apparatus of claim 3, wherein the reference stage is coupled to receive a voltage reference from a half differential amplifier stage.

Claim 5 (withdrawn): The apparatus of claim 4, further comprising a current source to bias the reference stage and a limiting amplifier coupled to the threshold detector.

Claim 6 (withdrawn): The apparatus of claim 1, wherein the threshold detector is coupled to detect a loss of a received signal input into a limiting amplifier.

Claim 7 (withdrawn): The apparatus of claim 6, wherein the received signal is derived from a high frequency optical signal.

Claim 8 (withdrawn): The apparatus of claim 6, wherein the threshold detector is coupled to detect an absolute value of a differential stage output of the limiting amplifier.

Claim 9 (withdrawn): The apparatus of claim 2, further comprising cross-coupled transistors coupled between the input stage and a resistor load to provide a feedback gain to the input stage.

Claims 10-16 (canceled)

Claim 17 (currently amended): A method comprising:

determining an absolute value of a differential input;

comparing the absolute value to a reference signal using a current comparator; and

providing a ~~common mode~~ direct current feedback signal based on the absolute value and the reference signal to a current source.

Claim 18 (canceled)

Claim 19 (original): The method of claim 17, further comprising providing an output of the current comparator that is indicative of a loss of received signal of an optical communication system.

Claim 20 (original): The method of claim 17, further comprising receiving the differential input from a limiting amplifier.

Claims 21-29 (canceled)

Claim 30 (previously presented): An apparatus comprising:

an absolute value detector to receive a differential input;

a cascode current comparator coupled to an output of the absolute value detector;

a latch coupled to the cascode current comparator; and

a differential current comparator coupled between the cascode current comparator and the latch.

Claim 31 (previously presented): The apparatus of claim 30, further comprising a current source to provide a source current to the absolute value detector.

Claim 32 (previously presented): The apparatus of claim 31, further comprising a reference circuit coupled to receive the source current and provide a tracking reference signal to the cascode current comparator.

Claim 33 (currently amended): An apparatus comprising:
an absolute value detector to receive a differential input;
a cascode current comparator coupled to an output of the absolute value detector;
a current source to provide a source current to the absolute value detector;
a reference circuit coupled to receive the source current and provide a tracking reference signal to the cascode current comparator;
a ~~common mode~~ feedback circuit coupled to receive the output of the absolute value detector and the tracking reference signal and to generate a feedback signal to be provided to the current source; and
a latch coupled to the cascode current comparator.

Claim 34 (previously presented): The apparatus of claim 33, further comprising a differential current comparator coupled between the cascode current comparator and the latch.

Claim 35 (previously presented): The apparatus of claim 30, further comprising a plurality of buffers coupled to the latch to generate a differential output representative of a loss of received signal of the differential input.

Claim 36 (previously presented): The apparatus of claim 35, wherein the plurality of buffers each comprises a Darlington circuit.

Claim 37 (previously presented): The apparatus of claim 32, wherein the reference circuit comprises a plurality of Schmitt triggers.

Claim 38 (previously presented): The apparatus of claim 37, wherein the plurality of Schmitt triggers comprise a first Schmitt trigger having an output coupled to an input of a second Schmitt trigger.

Claim 39 (previously presented): The apparatus of claim 1, wherein the second current comparator is to generate a high gain signal.

Claim 40 (previously presented): The apparatus of claim 1, wherein the first current comparator comprises a cascode current comparator and the second current comparator comprises a differential current comparator.

Claims 41 – 44 (cancel)

Claim 45 (previously presented): The method of claim 17, further comprising generating a differential signal based on comparing the absolute value to the reference signal.

Claim 46 (previously presented): The method of claim 45, further comprising generating a high gain differential signal from the differential signal.

Claim 47 (currently amended): The method of claim 17, further comprising controlling the current source ~~current~~ to provide a source current for an absolute value detector and a reference signal generator based on the ~~common-mode~~ direct current feedback signal.

Claim 48 (previously presented): The method of claim 17, further comprising using a cascode current comparator to compare the absolute value to the reference signal.

Claim 49 (previously presented): The method of claim 17, further comprising generating the reference signal compensated for temperature variation.

Claim 50 (previously presented): The apparatus of claim 33, further comprising a plurality of buffers coupled to the latch to generate a differential output representative of a loss of received signal of the differential input.

Claim 51 (previously presented): The apparatus of claim 33, wherein the reference circuit comprises a plurality of Schmitt triggers.

Claim 52 (previously presented): A system comprising:

an absolute value detector to receive an input signal;

a first current comparator coupled to receive an output of the absolute value detector, the first comparator to also receive a reference signal; and

a feedback circuit to receive the output of the absolute value detector and the reference signal and to generate a reference signal for a current source for the absolute value detector.

Claim 53 (previously presented): The system of claim 52, further comprising a second current comparator to receive a differential output of the first current comparator.

Claim 54 (previously presented): The system of claim 53, wherein the first current comparator comprises a cascode current comparator and the second current comparator comprises a differential current comparator.